

## **CLAIMS**

I claim:

1. A method for transmitting sounds originating close to a site, while sharply attenuating sounds originating farther from said site, comprising the steps of:

- 5       (a.) positioning a reference transducer as close as possible to said site,
- (b.) positioning three or more satellite transducers, on a circle centered on said reference transducer, such that said satellite transducers divide said circle into equal arcs,
- (c.) transducing all sounds reaching each said transducer, to yield a signal from  
10       each said transducer,
- (d.) averaging said signals from said satellite transducers, to yield an average satellite signal,
- (e.) subtracting said average satellite signal, or a portion thereof, from said signal of said reference transducer, to yield a difference signal, and  
15       (f.) converting said difference signal to a form suitable for interpretation,

whereby distance selectivity is enhanced, and a focusing effect is achieved.

2. The method of Claim 1, wherein said reference transducer and said satellite transducers are microphones.

3. The method of Claim 1, wherein positioning said satellite transducers, on  
20       said circle centered on said reference transducer, such that said satellite transducers divide said circle into equal arcs, is accomplished by a housing which holds said reference transducer and said satellite transducers in correct relation to one another.

4. The method of Claim 3, wherein said housing funnels sound from a central area to said reference transducer, and separately funnels sound from peripheral areas to said satellite transducers via a common trough shared by all said satellite transducers.

5 5. The method of Claim 1, wherein averaging is accomplished by connecting said satellite transducers in parallel between a direct current-biased signal wire and an electrical ground.

6. The method of Claim 1, wherein the portion of said average satellite signal, to be subtracted from said reference signal, is continuously adjustable  
10 from zero to 100 percent.

7. The method of Claim 1, wherein converting said difference signal to a form suitable for interpretation includes functions selected from the group consisting of amplification, filtering, and transduction.

8. A compound microphone, comprising:

- 15 (a.) a source of electrical power,
- (b.) a reference microphone, which transduces sound to a reference signal,
- (c.) three or more satellite microphones, positioned on a circle centered on said reference microphone, such that said satellite microphones divide said circle into equal arcs, each of which said satellite microphones transduces sound to a  
20 satellite signal,
- (d.) a housing, which maintains said reference microphone and said satellite microphones in correct relation to one another, and
- (e.) a signal-processing circuit, which subtracts an average of said satellite

signals, or a portion thereof, from said reference signal, yielding a difference signal,

whereby said difference signal is predominately representative of sound originating proximate to said reference microphone, resulting in enhanced distance selectivity, and a focusing effect.

9. The compound microphone of Claim 8, wherein said housing funnels sound from a central area to said reference microphone, and separately funnels sound from peripheral areas to said satellite microphones via a common trough shared by all said satellite microphones.

10. The compound microphone of Claim 9, wherein said central area is circular and said peripheral areas comprise an annulus concentric with said central area.

11. The compound microphone of Claim 10, further including a circular diaphragm which covers said central area, and an annular diaphragm which covers said peripheral areas.

12. The compound microphone of Claim 8, wherein said satellite microphones are connected in parallel between a direct current-biased signal wire and an electrical ground, whereby said average of said satellite signals is present on said direct current-biased signal wire.

13. The compound microphone of Claim 8, wherein said portion of said average of said satellite signals is continuously adjustable from zero to 100 percent, whereby the distance selectivity function of said compound microphone is continuously adjustable.

**14.** The compound microphone of Claim 8, wherein said signal-processing circuit further amplifies said difference signal.

**15.** The compound microphone of Claim 14, wherein said signal-processing circuit further filters said difference signal.

5 **16.** The compound microphone of Claim 8, wherein said signal-processing circuit further filters said difference signal.

**17.** The compound microphone of Claim 8, further including an output connector, which transmits said difference signal to an external device,

10 **18.** The compound microphone of Claim 17, wherein said output connector is an audio jack.

**19.** The compound microphone of Claim 8, further including a speaker, which transduces said difference signal to sound.

15 **20.** The compound microphone of Claim 8, wherein said signal-processing circuit contains no capacitors in the signal path, whereby attenuation of low-frequency signal components due to series capacitance is eliminated.